

## Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



1927  
F2082  
1927

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH ADMINISTRATION  
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE  
WASHINGTON 25, D. C.

In cooperation with State, Federal and Other Agencies

COTTON INSECT CONDITIONS FOR WEEK ENDING JUNE 30, 1950  
(Fifth Cotton Insect Survey Report for 1950)

The boll weevil situation was serious in most areas at the end of June. During the last week of the month there was less hot, dry weather to check the weevils than during the two previous weeks. More cotton growers are controlling the boll weevil by the use of insecticides than during any previous year. July and August are the critical months for boll weevil control. No matter how abundant the weevils may be during July and August they can be checked by the proper use of insecticides.

The cotton leafworm was more widely distributed at the end of June than during any previous June since 1943. It has now been reported from at least 26 counties in Texas, Okfuskee and Payne Counties in Oklahoma and Madison Parish in Louisiana. It is probable that the moths have reached many other counties.

INSECTICIDES  
AND EQUIPMENT FOR APPLYING THEM

South Carolina: A summary statement that accompanied the Cotton Letter issued by the Extension Service, Clemson College, on June 27, mentions that in certain counties shortages of insecticides and equipment for applying them have been reported. Among the insecticides mentioned are formulations containing benzene hexachloride, toxaphene, DDT, and calcium arsenate. Ten counties reported shortages of equipment for applying insecticides to control cotton insects, including hand dusters, mule dusters, traction dusters, and spraying machines.

Alabama: W. A. Ruffin, Extension Entomologist, Auburn, reported June 28: "Mixers of insecticides in Alabama and those that serve this area are definitely short on toxaphene concentrate, BHC, and DDT. Calcium arsenate even is in short supply. According to the best estimates that we can get, we have located in the state between 30 or 40 million pounds of insecticides. This is probably twice as much as was used last year, but if we have a boll weevil situation during July and August comparable to 1949, this amount of poison will definitely not supply our needs."

Louisiana: R. C. Gaines reported on June 29: "Boll weevil infestations are general. Poison is and has been applied to a degree never before observed. Supplies of poison are still available, however, it is becoming necessary to shop around to find the wanted poison."

Texas: Herman S. Mayeux, San Benito, reported on June 29: "Supplies of insecticides are still short but distributors are doing all they can to obtain poison for the farmers."

Arkansas: Charles Lincoln wrote on July 3: "The supply of insecticides continues tight with DDT joining BHC, toxaphene and calcium arsenate on the scarce list. A lot of insecticides have been manufactured but have gone into farmers' hands and stocks have not accumulated in manufacturers' and dealers' hands."

Excerpts from Weekly Cotton Weather Bulletin issued by the Weather Bureau, U. S.

Department of Commerce, New Orleans, Louisiana, June 27:

Weather and Cotton over the Belt: Weevil activity is still high over the main belt but with weather favorable for holding them in check west of the Mississippi River and over southern Mississippi.

Texas: Cotton made excellent progress with planting complete. Insects causing damage where not controlled. Cotton harvest underway lower valley and early field.

Arkansas: Weather favorable for holding weevil activity in check.

Oklahoma: Weather favorable for weevil activity. Grasshoppers in damaging numbers in southwest.

Louisiana: Weather moderately favorable for weevil activity; abundant and damaging dusting underway.

Mississippi: Weather moderately favorable for weevil activity. Poisoning underway.

Tennessee: Weather very favorable for weevil activity.

Alabama: Temperatures favorable for cotton and holding weevils in check. Poisoning becoming active.

Georgia: Weather favorable for holding weevil in check.

South Carolina: Weather unfavorably hot except for cotton. Weather favorable for holding weevils in check and dusting in progress.

North Carolina: Boll weevil infestation critical, reported worst in history in some localities.

#### BOLL WEEVIL

South Carolina: The Cotton Letter issued by the Extension Service at Clemson College on June 27 states that the average infestation in the poisoned fields throughout the State was 15% punctured squares as compared with an average of 54% punctured squares in the unpoisoned fields. Average infestations throughout the State were very high where insecticides are not being used. This Cotton Letter indicates that 524,000 acres of cotton in South Carolina have been poisoned through June 24 for boll weevil control. When the letter was issued there were 234,000 acres of cotton that had thus far not been poisoned.

Boll weevils are continuing to emerge from hibernation but at a reduced rate. Only 23 weevils emerged from the hibernation cages at Florence this week as compared with 61 the previous week. A total of 739 weevils have been removed from the cages to date as compared with 509 in 1949, 8 in 1948, and 147 in 1947.

A total of 525 weevils were collected in the early-planted 1/5-acre trap-plot of cotton as compared with 1,450 the previous week. To date 5,047 have been removed from the trap-plot which is  $3\frac{1}{2}$  times the highest number of weevils ever removed from this trap planting since it was started in 1938. The weevils collected in the trap-plot through July 1 as compared with previous years are as follows:



<u>Year</u>	<u>Weevils Collected</u>	<u>Year</u>	<u>Weevils Collected</u>
1950	5,047	1946	365
1949	1,435	1945	563
1948	450	1944	150
1947	1,092	1943	518

The average square infestation in 85 unpoisoned fields in 17 counties was 65%. In 4 fields the infestation ranged from 26 to 50% and in 81 fields more than 50% of the squares were punctured. In the examination of 41 poisoned fields in 16 counties the average infestation was 11%. In 19 fields less than 11% of the squares were punctured and in 22 fields the infestations ranged from 11 to 25%.

Georgia: Hot, dry weather aided in reducing boll weevil populations especially in the Coastal Plain area. Conditions were not as favorable in the Piedmont section of the State. Cooler weather and more rain was favorable for weevils. In the examination of 120 fields in 28 southwestern counties the average infestation was 16%. No infestation was found in two fields in Cook and Colquitt Counties. In 59 fields less than 11% of the squares were punctured; in 41 fields from 11 to 25%; in 14 fields from 26 to 50%, and in 4 fields in Dodge, Colquitt, Seminole, and Thomas Counties more than 50% of the squares were punctured. In 76 fields in 24 southeastern counties the infestation was less than 11% in 26 fields; in 25 fields from 11 to 25%; in 14 fields from 26 to 50%, and in 6 fields more than 50% of the squares were punctured. All of the 25 fields examined in the 11 northeastern counties were infested. Infestation was less than 11% in 7 fields; from 11 to 25% in 7 fields; from 26 to 50% in 6 fields, and more than 50% of the squares were punctured in 5 fields. All of the 25 fields examined in 11 northwestern counties were infested, ranging from 1 to 10% in 7 fields; from 11 to 25% in 4 fields; from 26 to 50% in 2 fields, and more than 50% of the squares were punctured in 2 fields.

Alabama: W. A. Ruffin reported on June 28: "We have had extremely hot weather with only local showers occurring during the past 15 or 20 days. We are hoping that this kind of weather will result in a low emergence of first generation weevils. If we are fortunate enough to have good cotton weather for the next month, it is quite possible that we will produce a good crop of cotton with the insecticides that are now available. Incidentally, the crop in Alabama is doing wonderfully well, and stands are excellent in most fields."

Boll weevils were found in all of the 83 fields examined in 12 counties at an average rate of 34% punctured squares. In 28 fields infestation ranged from 11 to 25%; in 42 fields from 26 to 50%, and in 13 fields more than 50% of the squares were punctured.

Tennessee: Boll weevils were found in all of 23 fields examined in 4 counties at an average rate of 44% punctured squares, ranging from 7 to 73%. In 10 fields examined in 3 counties the previous week the infestation averaged 37% punctured squares, ranging from 14 to 58%.

Mississippi: Clay Lyle reported on July 3: "Hot, dry weather in most sections of Mississippi is helping the cotton insect situation. Heavy boll weevil infestations are present on nearly all hill farms where poison has not been used, but many of the grubs in the squares are being killed by the heat. Poisoning is now needed on nearly all hill farms but should not be applied until fields have been examined and the percentage of punctured squares determined. Many fields of late cotton have few or no weevils."

"Inspections during the past week by state and federal workers on 562 farms in 41 counties showed weevils present on 487 farms with an average infestation of 20% which compares with 22% last week and 30% on this date last year."

Boll weevils were found in 353 of the 425 fields examined in 17 Delta counties with an average of 13% punctured squares in the infested fields as compared with 18% last week and 19% a year ago. In 206 fields less than 11% of the squares were punctured; in 87 fields from 11 to 25%; in 44 fields from 26 to 50%; and in 16 fields more than 50% of the squares were punctured.

Louisiana: Boll weevils continue to emerge in hibernation cages at Tallulah. The total emergence from May 1 to June 29 was 15.56%. The emergence for the week ending June 29 was 1.84%; for the week ending June 22, 1.54%; for the week ending June 15, 1.84%; and for the week ending June 8, 1.94%. The emergence from May 1 to June 29 during the past 19 years is given in the following table:

: Boll Weevil Survival		: Boll Weevil Survival	
Year : in Hibernation Cages		Year : in Hibernation Cages	
: from May 1 to June 29		: from May 1 to June 29	
	Percent		Percent
1950	15.56	1940	.02*
1949	4.04*	1939	1.94*
1948	.38*	1938	.76*
1947	1.84*	1937	17.94
1946	9.22	1936	.12*
1945	14.80	1935	.48*
1944	2.26	1934	4.24*
1943	.98	1933	.44*
1942	.08*	1932	15.26
1941	16.68		
* Emergence completed			

Plant examinations were made in 49 fields of young cotton in 12 parishes, finding 42 fields infested and 7 uninfested. Square counts were made in 153 fields in 25 parishes. The average infestation was 26%. In 9 of the fields no punctured squares were found. In 48 fields less than 11% of the squares were punctured; in 38 fields from 11 to 25%; in 32 fields from 36 to 50%; and in 26 fields more than 50% of the squares were punctured.

Arkansas: Charles Lincoln, Extension Entomologist, reported on July 3: "In eastern and southeastern Arkansas overwintered weevils have faded rapidly. In other sections they are hanging on with more late emergence than expected." Some of the high infestations reported by Dr. Lincoln included fields with 2,800 weevils per acre in Little River County; 2,000 weevils per acre in Conway County; 2,655 per acre in Van Buren County; and 540 per acre in Jackson County. High square infestation counts included fields with 50% punctured squares in Yell County; 85% in Conway County, and 48% punctured squares in Jackson County.

Plant examinations were made in 369 fields in 11 counties, finding 145 fields infested with weevils and 224 uninfested. Among the high records were fields with 3,000 weevils per acre in Pulaski County, 1,800 per acre in Jackson County and 1,620 per acre in Miller County. In a few fields cotton was large enough for square counts. In 33 fields in 8 counties an average of 13% of the squares was punctured. In 5 fields no punctured squares were found. In 14 fields the infestation ranged from 1 to 11%; in 8 fields from 11 to 25%; in 5 fields from



26 to 50%; and in 1 field more than 50% of the squares were punctured.

Texas: Rainfall, ranging from light showers to heavy rains, fell over many sections of the State during the latter part of the week. The heavier rains were beneficial to crops and were also favorable for development of cotton insects. First generation boll weevils are now appearing in central and north central areas. Increases in infestations may be expected in these areas, especially where conditions have been favorable for weevil development.

The average weevil infestation in 547 fields in 94 counties was 21% punctured squares as compared with 24% the previous week. No weevils were found in 80 of the fields examined; in 193 fields less than 11% of the squares were punctured; in 115 fields from 11 to 25%; in 86 fields from 26 to 50%; and in 73 fields more than 50% of the squares were punctured.

Boll weevils continue to emerge from hibernation cages at Waco. The percent of emergence at this date as compared with previous years and total seasonal survival are as follows:

Year	Seasonal survival as of June 30	Total seasonal survival, percent
1940	0.20	0.20
1941	21.28	21.32
1942	0.715	0.715
1943	0.225	0.225
1944	2.78	2.78
1945	3.42	3.42
1946	1.32	1.32
1947	0.18	0.18
1948	0.22	0.22
1949	0.06	0.06
1950	4.28	

Herman S. Mayeux, Entomologist, in the Lower Rio Grande Valley, stated in his cotton insect survey report #16, issued at San Benito on June 29: "Boll weevils continue to destroy Valley cotton and will probably take over 50,000 bales in the 3 counties before the season ends. Losses by individual farmers vary greatly from almost no cotton loss to practically a total loss, depending upon the control practices used. Late planted cotton is under attack from weevils that are flying in from older fields. Weevils are ruining the younger bolls in both early and late planted cotton fields.

"Most farmers are using poison for boll weevil control. However, only about half of the fields in the Valley have less than 50% of the squares punctured. Most of these fields belong to farmers who are using a rigid schedule of dusting or 4-or 5-day schedule. The weevil has 'taken over completely' in most cases where poisons have been used irregularly without proper coverage of the plants or not at all."

Oklahoma: Weevils are hard to find now due to the increased size of the cotton plants. In the examination of 110 fields in 17 counties weevils were found at an average rate of 507 per acre. Square infestation counts made in 13 fields of early planted cotton in 5 counties averaged 24% punctured squares.

### COTTON LEAFWORM

Texas: By the end of June cotton leafworms had been reported in at least 20 counties in southern Texas. In addition to the 17 counties mentioned in previous reports, K. P. Ewing advised on June 30 that leafworms had appeared in Live Oak, Washington, and Wharton Counties. The cotton leafworm had spread over a larger area in Texas by the end of June than during any previous June since 1943.

On July 3, K. P. Ewing reported that considerable poisoning is being done in the counties of the lower coastal area for cotton leafworm control, but more needs to be done. He stated that new infestations had been reported from Jim Wells, Fort Bend, Austin, Williamson, McLennan, and Howard Counties. This makes 26 counties that were known to be infested with leafworms by July 3.

Herman S. Mayeux, San Benito, reporting for the Lower Rio Grande Valley, wrote on June 29: "The cotton leafworm has not become as serious as previously expected, probably because of the poisons used for boll weevil, and because parasites are destroying many leafworms."

Oklahoma: The first cotton leafworm reported outside of Texas was found on June 20 near Okemak, Okfuskee County, in the north central section of the State by F. A. Fenton and associates.

On July 4, C. F. Stiles submitted some full grown cotton leafworms collected near Yale in the eastern part of Payne County in the northern part of the State. J. G. Franclemont verified the determination.

Louisiana: A pupa of the cotton leafworm was collected on June 28 near Tallulah by M. T. Young. The adult moth emerged on June 30. J. G. Franclemont verified the determination.

### MISCELLANEOUS INSECTS

South Carolina: The Cotton Letter from the Extension Service of South Carolina, dated June 27 states: "Bollworms are becoming serious in most of the counties east of US highway No. 1. The attention of all farmers in this area and in adjoining counties is called to the fact that it is easier to kill a few small worms than it is to kill millions of large ones later. IF THEY ARE A PROBLEM ON YOUR FARM, CHANGE TO A 5-DAY POISONING PROGRAM AND INCREASE THE RATE OF MATERIALS USED PER ACRE TO 15 POUNDS OF DUST OR ITS EQUIVALENT IN A SPRAY. Continue until control is obtained."

Georgia: Lepidopterous larvae continue to cause damage in the Coastal Plain counties.

Alabama: W. A. Ruffin, Extension Entomologist, Auburn, wrote on June 28: "We have what appears to be a serious outbreak of bollworm and tobacco budworm over most of the southern half of the State. Dr. Arant and I have checked very carefully to find out if there is any difference in worm infestations in fields that have been dusted or sprayed early as compared to fields where no insecticide has been applied. There is a definite indication that early treatment of fields has aggravated the work situation. Fields that have not been treated, so far as we have been able to determine, have not been damaged by worms. Worms may occur in these fields but the populations were not nearly so high as in fields that have been treated."



Mississippi: During the week records were made in 425 fields in 17 Delta counties to determine the presence of lepidopterous larvae, bud damage, or square damage. Many of the records indicated only slight bud damage, while the rest were square damage. The highest percentage of square damage recorded was 14%. Of the 126 fields showing some work damage, 77 had received early season poison applications whereas 49 received none. Egg counts and observations indicate that the threat from this pest is now decreasing.

Louisiana: R. C. Gaines reported on June 29: "Bollworms (probably mostly tobacco bud worms) have been reported in many additional fields; however, this generation will probably be of no economic importance."

Arkansas: Under the heading "Bollworm" Charles Lincoln, Extension Entomologist, reported on July 3 concerning the appearance of lepidopterous larvae in several fields in several counties. He wrote: "A majority of the worms may be tobacco budworm rather than corn earworms. Destruction of beneficial insects by early treatment has contributed heavily to this flurry of bollworms. Heavy infestations will be necessary to justify control. There are no bolls to damage and a high percentage of squares would have to be at stake before control would pay."

Texas: Herman S. Mayeaux, San Benito, reported on June 29: "Bollworms still threaten and are damaging a few fields."

PREPARED JULY 7, 1950

